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Carl Hering  
Feb. 26, 1908

# WARNER ARC LAMPS

MANUFACTURED BY

Warner Arc Lamp Company

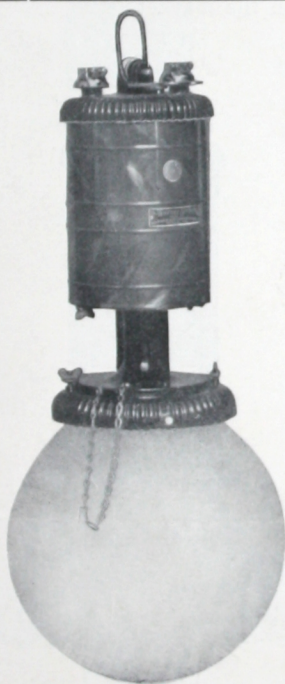
(INCORPORATED)

MUNCIE, INDIANA, U. S. A.

## Multiple Enclosed Arc Lamps

BULLETIN No. 303

SUPERCEDING BULLETIN No. 203



NO. 11

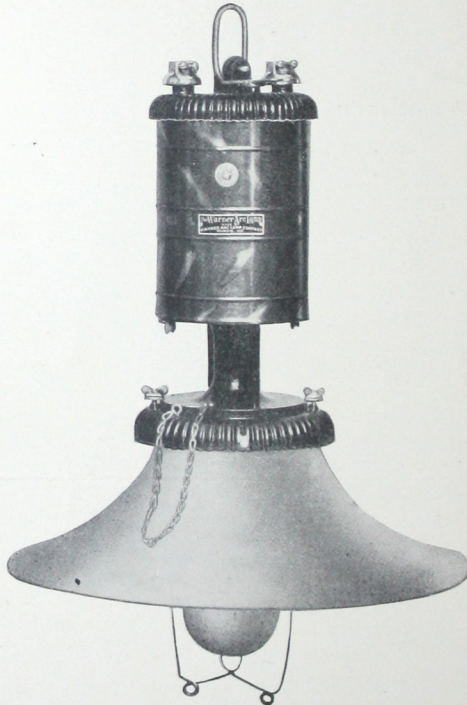
Showing Interchangeable Lamp with Closed Bottom Outer Globe.

High grade Lamps for constant potential direct current, 110 to 130 and 220 and 250 volts.

## INTRODUCTION

In offering the Warner Arc Lamp to the trade we are doing so with the full understanding of the long felt want of a serviceable, reliable and efficient arc lamp. We therefore present to you at fair prices a fire-proof lamp with from 20 to 50 per cent. higher economy in current consumption than other lamps on the market, and a lamp that embodies the best that electrical and mechanical skill and careful workmanship can produce, and we back our product up with our guarantee.

The accompanying cuts and descriptions will readily disclose to you the many features of superiority in the Warner Lamp over other lamps now on the market.



NO. 12

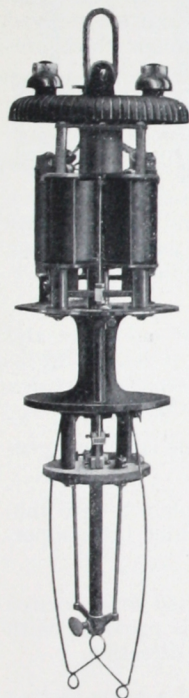
SHOWING LAMP WITH OPAL SHADE AND GLOBE.

This arrangement affords perfect distribution of light—free from shadows—adapted to all conditions of indoor service.



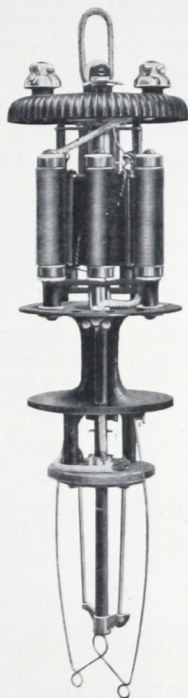
## CONSTRUCTION

The accompanying cuts illustrate the Warner Multiple Arc Lamp with the casing, globes and outer globe holder removed, showing the many excellent features of the mechanical arrangement.



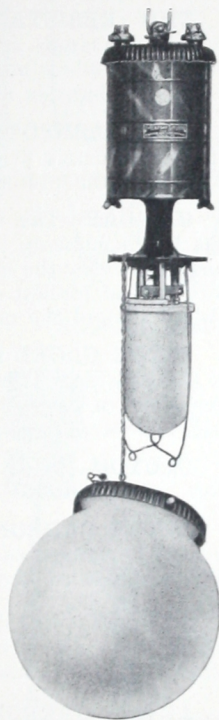
NO. 1

Showing Arrangement of Magnets and Dash Pot.



NO. 2

Showing Resistance Units in Position



NO. 3

Outer Globe Removed.

**MAGNETS**—We wish, however, to especially call your attention to the Magnets, or actuating element, which is divided into two units, thus insuring a highly sensitive magnet to variation in current flow with a minimum mechanical loss in energy. The Coils are wound with asbestos covered wire on Vulcanite Spools, which means fire-proof construction. (See cuts 1 and 2.)

**NECK**—We next wish to call your attention to the Neck—narrowing of the lamp between the arc chamber and the mechanism. This arrangement keeps the heat produced in the arc entirely away from the mechanism in the upper part of the lamp, an advantage readily understood and appreciated by lamp users. (See Cuts No. 3 and 4.)

**CLUTCH ROD**—Next we may mention the one-piece Clutch-rod, which is a straight rod from the connecting link at the clutch below to the piston of the dashpot above. You will note how utterly impossible it is to get this arrangement out of adjustment. No pivot or knife-blade bearings, but a straight lift. (See Cut No. 10.)

**THE RESISTANCE MOUNTING**, a highly important feature in arc lamps, is divided into three units wound on grooved porcelain bobbins and mounted on asbestos punchings which provide for expansion and contraction. (See Cut No. 5.)

**THE DASHPOT**, having a large air displacement, permits of a more loosely fitting plunger, which in turn prevents any possibility of the plunger sticking. (See Cut No. 10.)

**GAS-CAP**—This is machined from a form of soap-stone which has in its make-up large percentages of mica and asbestos, and unquestionably the most serviceable gas-cap ever used. Being an insulator of highest quality, no bushing or other insulation is required around the negative conductors.

**INNER GLOBE HOLDER**:—Made entirely of one piece and is inexpensive. This device is so designed that it holds the inner globe in position under a positive but very sensitive tension and insures a minimum globe breakage. (See Cut No. 6.)

**CLUTCH**—Made of one piece, simple, reliable and inexpensive. (See Cut No. 7.)

**UPPER CARBON SHEATH**—Made of phosphor bronze tubing, and arranged so that it cannot be twisted, which insures permanent cable connections. (See Cut No. 8.)

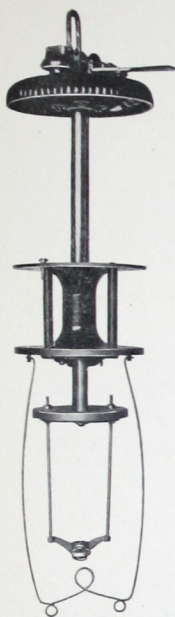
**SWITCH**—This device is a strongly constructed knife switch having contacts on both sides of the blade. It is provided with stops so that it cannot be thrown too far in either direction.

**LOWER CARBON HOLDER**—This consists of a brass casting suspended by two brass rods which provides two routes through which the negative current flows. This arrangement has a neutralizing effect on the magnetic field set up around the two conductors which are set diametrically opposite, with the result that the two magnetic fields are of zero value in the path of the arc. This prevents any deflecting of the arc with the assurance of even burning of the carbons all the way around. (See Cut No. 4.)

**CARBON TUBE**—The Carbon Tube forms the support between the upper and lower part of the lamp, thus providing a very rigid construction. (See Cuts No. 4 and 9.)

**INTERCHANGE FEATURE**—Is rigidly adhered to in all lamps, that is, the same frame and glassware is common to all lamps, either A. C. or D. C. series or multiple. (See Cut No. 4.)

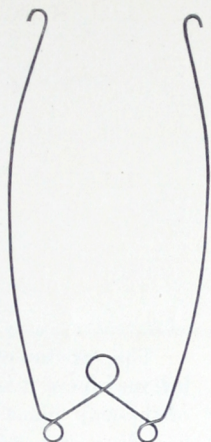
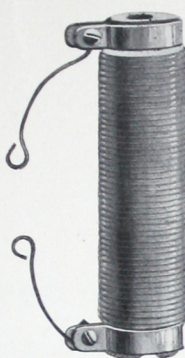




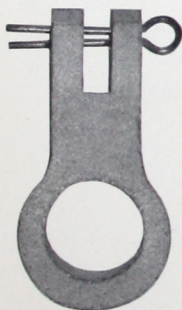
No. 4  
Lower Carbon  
Holder.



No. 5  
Showing Porcelain Form and Finished  
Resistance Unit.



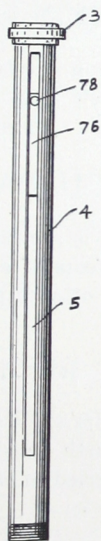
No. 6  
Inner Globe Holder.



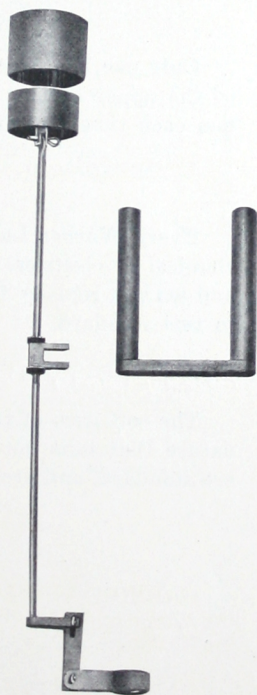
No. 7  
Lava Clutch.



No. 8  
Upper Carbon Sheath and  
Connecting Cable.



No. 9  
Carbon Tube.



No. 10  
Armature, Dashpot and Clutch

## EXTERNAL RESISTANCE

The resistance can be furnished in separate casings for installations where it is desirable to locate these at some remote or out-of-the-way place because of the high temperatures of the surrounding atmosphere in which it is sometimes desirable or necessary to hang lamps.

## CARBON ECONOMY

Only one 12-inch carbon is required to each trim, as a portion of the upper carbon is left long enough to make the lower carbon each time the lamp is trimmed.

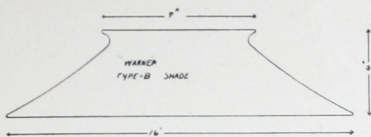
## GUARANTEE

Every Warner Lamp is guaranteed to be free from any mechanical or electrical defects of either workmanship or material, and we will replace, free of cost, any lamp that does not come up to this standard.

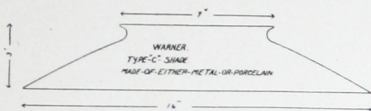
## REPAIRS

The cost item of repairs on Warner Lamps is of such a trivial nature that it is not worth considering. All screws, taps, etc., are standard, and are carried in stock by hardware merchants.

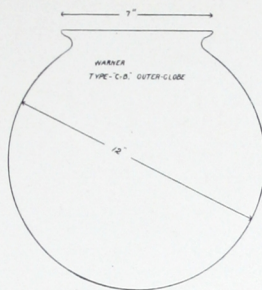




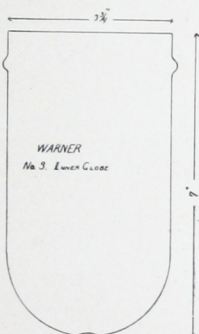
Warner Type B Shade



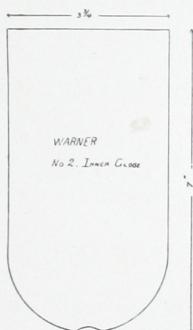
Warner Type C Shade  
Made of either Metal or Porcelain



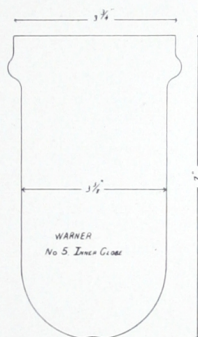
Warner Type C-B Outer Globe



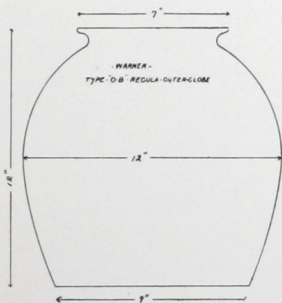
Warner  
No. 3 Inner Globe



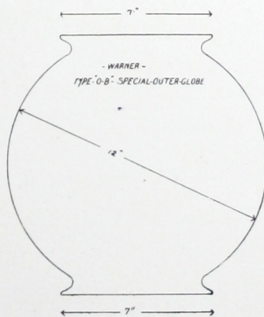
Warner  
No. 2 Inner Globe



Warner  
No. 5 Inner Globe



Warner  
Type O-B Regular Outer Globe



Warner  
Type O-B Special Outer Globe

## DATA

Weight of Lamp with Globes, 23 lbs.

Weight of Lamp without Globes, 18 lbs.

Length over all, 24 inches.

Carbons  $\frac{1}{2}$ x12 inches.

Inner Globe, No. 2,  $3\frac{3}{4}$ x7 inches. (Either clear or opal.)

Inner Globe, No. 3,  $3\frac{3}{4}$ x7 inches. (Either clear or opal.)

Inner Globe, No. 5,  $3\frac{3}{4}$ x $3\frac{3}{8}$ x7 inches. (Either clear or opal.)

Outer Globe, Type C-B, 12x12x7 inches.

Outer Globe, Type O-B regular, 12x12x7x9 inches.

Outer Globe, Type O-B special, 12x12x7x7 inches.

Opal Glass Shades, Type B, 4x16x7 inches.

Opal Glass Shades, Type C, 3x16x7 inches.

Fire Enameled Metal Shades, 3x16x7 inches.

Any combination of glassware.

## FINISH

Oxidized Copper or Black Enamel. Any special finish can be furnished. Always specify voltage and glassware.